Claims

[c1]   An autonomic e-mail processing system for use on a
voluntary basis by senders and recipients as part of an
e-mail server system, the autonomic e-mail processing
system comprising:

a first component for enabling a sender of an e-mail
message to designate a first e-mail message for auto-
nomic processing, the first e-mail message having at
least an address portion which identifies a plurality of
intended recipients and a note portion which contains
information to be sent to the intended recipients of the
e-mail;

a second component for identifying the first e-mail mes-
sage designated for autonomic processing with a unique
sending identification number within the autonomic pro-
cessing system;

a third component operable to enable intended recipi-
ents to indicate that an autonomic response is being
sent in response to the first e-mail message;

a fourth component for identifying each autonomic re-
sponse to the first e-mail message with a responding
identification number that in combination with the
unique sending identification number for first e-mail

message forms a combination identification number that is unique within the autonomic processing system;

a fifth component operable to enable the sender of the first e-mail message to designate that the processing of the first e-mail message has been completed; and

a sixth component operable to inform at least a plurality of the intended recipients that the processing of the first e-mail message has been completed.

[c2] The autonomic e-mail processing system of Claim 1, wherein:

the first component includes first means for causing to be displayed a first indicator that is at least temporarily associated with the first e-mail message and is visually discernable by the sender, with at least a portion of the first indicator being operable to be selected by the sender in order to designate the first e-mail message for autonomic processing;

the second component includes second means for causing to be displayed a second indicator that is at least temporarily associated with the first e-mail message, is visually discernable by the sender and displays a representation associated with at least part of the unique sending identification number associated with the first e-mail message;

the third component includes third means for causing to

be displayed a plurality of third indicators that are each at least temporarily associated with the first e-mail message and visually discernable by at least a plurality of recipients of the first e-mail message, each on their own respective screen, with the third indicators being respectively operable to be selected by such recipients to designate their respective response to the first e-mail message as an autonomic response; and

the fourth component includes fourth means for causing to be displayed a plurality of fourth indicators each associated with a respective autonomic response to the first e-mail message and visually discernable by at least the sender of the first e-mail message, with each such fourth indicator operable to display a representation associated with at least part of the unique combination identification number associated with that autonomic response.

[c3]   The autonomic e-mail processing system of Claim 2, wherein the first and third indicators each include radio buttons, and the second and fourth indicators each include an area for displaying a string of characters, with at least a plurality of characters being selected from a group of characters consisting of letters, numbers, punctuation marks and symbols.

[c4]   The autonomic e-mail processing system of Claim 2, wherein:

the fifth component includes fifth means for causing to be displayed a fifth indicator at least temporarily associated with the first e-mail message and visually discernable by the sender, that is operable to have at least a portion thereof be selected by the sender in order to designate that the autonomic processing for the first e-mail message has been completed; and

the sixth component includes sixth means for causing to be displayed a plurality of sixth indicators associated at least temporarily with at least the first e-mail message and visually discernable by at least the sender and a plurality of the intended recipients, each on their own respective screen, the sixth indicators each being operable to display a representation indicating that the processing of the first e-mail message is completed.

[c5]   The autonomic e-mail processing system of Claim 2, wherein fifth indicator includes a radio button, and the sixth indicators each include an area for displaying a string of characters, with at least a plurality of the characters being selected from a group of characters consisting of letters, numerals, punctuation marks and symbols.

[c6] The autonomic e-mail processing system of Claim 1, further comprising:

means for generating sending identification numbers (SIDs) that are unique, relative to each original autonomic e-mail message at least presently in the processing system that was sent for the first time by a sender to a plurality of recipients; and

means for generating responding identification numbers (RIDs) for identifying each autonomic response to the first e-mail message, with each such generated RID in combination with an associated SID, being a unique combined identification number (CID) relative to other autonomic e-mail messages and autonomic responses presently within the autonomic e-mail processing system.

[c7] The autonomic e-mail processing system of Claim 1, further comprising:

first means for designating autonomic e-mail messages within the e-mail system so as to distinguish them from non-autonomic e-mail messages;

second means for designating autonomic e-mail messages as being in process and as having been completed;

means for automatically generating unique sending identification numbers for use by the second component; and

means for automatically generating responding identification numbers for use by the fourth component.

[c8] The autonomic e-mail processing system of Claim 1, in which the e-mail server system is resident on an e-mail server computer system which is operable to interact with a plurality of individual computer stations arranged for use by senders and recipients of e-mail messages, and wherein:

the processing system is implemented with a client/server architecture having a server side resident at least primarily on the e-mail server computer system and a having a client side that is operable to communicate with the plurality of individual computer stations.

[c9] The autonomic e-mail processing system of Claim 8, wherein:

the server side has at least one program in communication with the e-mail server system; and the client side has at least one program operable to project at least parts of the first, third, fifth and sixth components to at least appear to be present from time to time on the plurality of individual computer stations.

[c10] The autonomic e-mail processing system of Claim 1, further comprising:

a seventh component operable to enable an intended re-

cipient of the first e-mail message that is responding thereto to indicate that the processing of the first e-mail message has been completed; and

an eighth component operable to inform at least a plurality of the intended recipients that the processing of the first e-mail message is considered, by at least one of the recipients, to be completed.

[c11] The autonomic e-mail processing system of Claim 10, wherein:

the seventh component includes means for causing to be displayed a plurality of seventh indicators at least temporarily associated with the first e-mail message and visually discernable by a plurality of the intended recipients, each on their own respective screen, the seventh indicators each being operable to have at least a portion thereof selected by its respective intended recipient in order to designate that the autonomic processing for the first e-mail message is considered, by that recipient, to be completed; and

the eighth component includes means for causing to be displayed a plurality of eighth indicators associated at least temporarily with at least the first e-mail message and visually discernable by at least the sender and a plurality of the intended recipients, each on their own respective screen, the eighth indicators each being opera-

ble to display a representation indicating that the processing of the first e-mail message is considered, by a recipient, to be completed.

[c12]   The autonomic e-mail processing system of Claim 11, wherein:

the seventh indicators each include a radio button; and the eighth indicators each include an area for displaying a representation of the identity of the recipient who considered the processing of the first e-mail message to be completed.

[c13]   The autonomic e-mail processing system of Claim 11, further comprising:

a ninth component operable by the sender of the first e-mail message for deselecting the selection made by an intended recipient via the seventh component.

[c14]   The autonomic e-mail processing system of Claim 13, wherein the ninth component includes a third radio button that is selectable by the sender of the first e-mail message for deselecting the "Completed Yet" selection made by an intended recipient.

[c15]   In an e-mail system, used within an organization, a method for allowing normal users of the e-mail system who are authorized to send and receive e-mail messages

to voluntarily select certain of their e-mail messages that they send for autonomic processing, and to thereafter process those selected e-mail messages autonomically, the method comprising the steps of:

(a) providing means for a plurality of senders of e-mail messages within an organization to designate selected e-mail messages of theirs and responses thereto for autonomic processing;

(b) designating, via a selection made by a first sender, at least a first e-mail message for autonomic processing;

(c) identifying a plurality of intended recipients in an address portion of such first e-mail message, and entering information in a note portion of such first e-mail message;

(d) identifying the first e-mail message designated for autonomic processing within the e-mail system with a unique sending identification number;

(e) providing means for each intended recipient of such first e-mail message to indicate that an autonomic response is being sent in response thereto;

(f) identifying each autonomic response to such first e-mail message with a responding identification number that in combination with the unique sending identification number for such first e-mail message forms a combination identification number that is unique within the e-mail system;

(g) providing means to enable the sender of such first e-mail message to indicate that the processing of the first e-mail message has been completed; and

(h) after the sender indicates that the processing of the first e-mail message has been completed, informing at least a plurality of the intended recipients that the processing of such first e-mail message has been completed.

[c16] The autonomic e-mail processing method of Claim 15, wherein step (h) is performed by automatically moving such first e-mail message, upon being designated as completed, to a different folder within a recipient's email folder system, the different folder being designated for holding completed autonomic e-mail messages.

[c17] The autonomic e-mail processing method of Claim 15, wherein step (h) is performed by automatically attaching to such first e-mail message within the in-box of the intended recipients thereof, an indicator signifying that the processing of such first e-mail message is considered to be completed.

[c18] The autonomic e-mail processing method of Claim 15, wherein step (h) is performed by automatically deleting such first e-mail message from the in-boxes of at least those recipients thereof that have not yet provided a re-

sponse to the first such e-mail message.

[c19] The autonomic e-mail processing method of Claim 15, wherein:

step (a) includes displaying at least temporarily to the sender of an original email message a first indicator associated with such first e-mail message, the first indicator including a sender-selectable portion designating the e-mail message for autonomic processing;

step (b) includes the sender selecting the sender-selectable portion in order to designate the first e-mail message for autonomic processing;

step (c) further includes sending such first e-mail message to the plurality of intended recipients in the address portion of such first e-mail message, and the entering information part of step (c) includes requesting that an action be taken by at least one of the recipients of the first e-mail, the action being selected from a group of actions consisting of providing certain requested information, performing a specific task, making a recommendation relative to an identified subject, and providing advice on an identified subject;

step (d) includes providing at least a portion of the unique sending identification number as a part of the first e-mail message when it is sent to the intended recipients;

step (e) includes displaying at least temporarily to each intended recipient of the first e-mail message a second indicator associated with such first e-mail message, the second indicator including a recipient-selectable portion; and

step (f) includes at least a first recipient selecting the recipient-selectable portion in order to designate his response to the first e-mail message as an autonomic response.

[c20] The method of claim 15 including the step of deploying process software for autonomic e-mail processing, the deployment comprising the steps of:

installing the process software on at least one server;

identifying server addresses for users accessing the process software on the at least one server;

installing a proxy server if needed;

sending the process software to the at least one server and copying the process software to a file system of the at least one server;

sending the process software to at least a first client computer; and

executing at least the process software on the first client computer.

[c21] The method of claim 20 wherein the step of installing the process software further comprises:

determining if programs will reside on the at least one
server when the process software is executed;
identifying the at least one server that will execute the
process software; and
transferring the process software to storage for the at
least one server.

[c22]   The method of claim 20 wherein the step of sending the
process software to the first client computer includes
having the at least one server automatically copy the
process software to the first client computer, and run-
ning an installation program at the first client computer
to install the process software on the first client com-
puter.

[c23]   The method of claim 20 wherein the step of sending at
the process software to the first client computer further
comprises identifying the user and the address of the
first client computer.

[c24]   The method of claim 20 wherein the step of sending the
process software to the first client computer includes
sending the process software to at least one directory on
the first client computer.

[c25]   The method of claim 20 wherein the step of sending the
process software to the first client computer includes

sending the process software to the first client computer via e-mail.

[c26]   The method of claim 15 including integrating process software for autonomic e-mail processing, the integration comprising the steps of:

determining if the process software will execute on at least one server;

identifying an address of the at least one server;

checking the at least one server for operating systems, applications and version numbers for validation with the process software, and identifying any missing software applications for the server that are required for integration;

updating the server with respect to any operating system and application that is not validated for the process software, and providing any of the missing software application for the server required for the integration;

identifying client addresses and checking client computers for operating systems, applications, and version numbers for validation with the process software, and identifying any software applications missing from the client computers that are required for integration;

updating the client computers with respect to any operating system and application that is not validated for the process software, and providing any missing software

application for the client computers required for the integration; and

installing the process software on the client computers and the at least one server.

[c27] The method of claim 15 including on demand sharing of process software for autonomic e-mail processing, the on demand sharing comprising the steps of:

creating a transaction containing unique customer identification, requested service type, and service parameters;

sending the transaction to at least one main server;

querying the at least one main server about processing capacity associated with the server to help ensure availability of adequate resources for processing of the transaction; and

allocating additional processing capacity when additional capacity appears needed to process the transaction, the additional processing capacity being selected from the group of additional capacities consisting of central processing unit capacity, processor memory capacity, network bandwidth capacity, and storage capacity.

[c28] The method of claim 27 further comprising the step of recording a plurality of usage measurements selected from the group of usage measurements consisting of network bandwidth, processor memory, storage, and

central processing unit cycles.

[c29] The method of claim 27 further comprising the steps of:
summing the usage measurements ;
acquiring at least one multiplicative value associated
with the usage measurements and with unit costs ; and
recording any such acquired multiplicative value as an on
demand charge to a requesting customer.

[c30] The method of claim 27 further comprising at least one
of the following steps:
posting the on demand charge on a web site if requested
by the requesting customer, and
sending the demand charge via e-mail to the requesting
customer's e-mail address.

[c31] The method of claim 27 further comprising charging the
on demand charge to the requesting customer's account
if an account exists and if the requesting customer has
selected a charge account payment method.

[c32] The method of claim 15 including deploying, accessing,
and executing process software for autonomic e-mail
processing through a virtual private network, the method
further comprising the steps of:
determining if a virtual private network is required;
checking for remote access to the virtual private network

when it is required;

if the remote access does not exist, identifying a third
party provider to provide secure, encrypted connections
between a private network and remote users;

identifying the remote users ; and

setting up a network access server for downloading and
installing client software on desktop computers for re-
motely accessing the virtual private network;

accessing the process software;

transporting the process software to at least one remote
user's desktop computer; and

executing the process software on the at least one re-
mote user's desktop computer.

[c33]   The method of claim 32 further comprising:

determining if the virtual private network has a site-
to-site configuration for providing site-to-site access,
and if the virtual private network is not so available, in-
stalling equipment required to establish a site-to-site
configuration for the virtual private network ;

installing large scale encryption into the site-to-site vir-
tual private network; and

accessing the process software through the site-to-site
configuration with large scale encryption.

[c34]   The method of claim 32 wherein the step of accessing
the process software further comprises one of the fol-

lowing steps:

dialing into the network access server , and

attaching directly via a modem into the network access server, the modem being selected from the group of modems consisting of telephone dial-up modems, cable modems, DSL modems and wireless modems.

[c35] A computer program product, to be used in conjunction with an e-mail system having as least one computer having at least one processing circuit, the software product comprising:

a storage medium readable by at least the one process-ing circuit and storing instructions for execution for by the processing circuit for performing a method compris-ing the steps of B

(a) providing means for a plurality of senders of e-mail messages within an organization to designate selected e-mail messages of theirs and responses thereto for au-tonomic processing;

(b) designating, via a selection made by a first sender, at least a first e-mail message for autonomic processing;

(c) identifying a plurality of intended recipients in an ad-dress portion of such first e-mail message, and entering information in a note portion of such first e-mail mes-sage;

(d) identifying the first e-mail message designated for

autonomic processing with a unique sending identification number within the e-mail system;

(e) providing means for each intended recipient of such first e-mail message to indicate that an autonomic response is being sent in response thereto;

(f) identifying each autonomic response to such first e-mail message with a responding identification number that in combination with the unique sending identification number for such first e-mail message within the e-mail system is unique;

(g) providing means to enable the sender of such first e-mail message to indicate that the processing of the first e-mail message has been completed; and

(h) informing at least a plurality of the intended recipients that the processing of such first e-mail message has been completed.